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IS 7134 (1973): Diphenyl [PCD 9: Organic Chemicals Alcohols and Allied Products and Dye Intermediates]



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IS : 7134 - 1973

*Indian Standard*  
SPECIFICATION FOR  
DIPHENYL

UDC 547.621



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**INDIAN STANDARDS INSTITUTION**  
MANAK BHAVĀN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110001

*June 1974*

**AMENDMENT NO. 1      DECEMBER 1989**  
**TO**  
**IS : 7134 - 1973   SPECIFICATION FOR**  
**DIPHENYL**

[ *Page 4, Table 1, col 3, Sl No. ( i )* ] — Substitute '0.50' for '0.5'.

[ *Page 4, Table 1, col 3, Sl No. ( ii )* ] — Substitute '68.0 to 69.0' for '68 to 69'.

[ *Page 4, Table 1, col 3, Sl No. ( v )(a) and (b)* ] — Substitute '252.0°C' for '252°C' and '260.0°C' for '260°C'.

( PCDC 9 )

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# Indian Standard

## SPECIFICATION FOR DIPHENYL

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## **2. REQUIREMENTS**

**2.1 Description** — The material shall be a white or slightly yellow crystalline solid which when crystallized from a solvent ( alcohol or ether ) gives plates or monoclinic prismatic crystals. It is inflammable and possesses a characteristic odour.

**2.2** The material shall comply with the requirements given in Table 1, when tested according to the methods given in Appendix A. Reference to the clauses of Appendix A is given in col 4 of the Table.

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**TABLE 1 REQUIREMENT FOR DIPHENYL**

<b>Sl No.</b>	<b>CHARACTERISTIC</b>	<b>REQUIREMENT</b>	<b>METHOD OF TEST ( REF TO CLAUSE No. IN APPENDIX A</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
i)	Moisture, percent by mass, <i>Max</i>	0.5	A-2
ii)	Melting point, °C	68 to 69	A-3
iii)	Ash, percent by mass, <i>Max</i>	0.1	A-4
iv)	Flash point ( closed ), °C, <i>Min</i>	109	A-5
v)	Distillation range:		A-6
	a) Initial boiling point, at 760 mmHg, <i>Min</i>	252°C	
	b) Dry point at 760 mmHg, <i>Max</i>	260°C	

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## **3. PACKING AND MARKING**

**3.1 Packing** — The material shall be packed in tinned, galvanised or polyethylene lined steel containers or as agreed to between the purchaser and the supplier.

### **3.2 Marking**

**3.2.1** The containers shall be securely closed to prevent moisture or any contamination and marked with the following:

- a ) Manufacturer's name and recognized trade-mark, if any;
- b ) Name and net mass of the material in the container; and
- c ) Lot or batch number, in code or otherwise.



### 3.2.2 The containers may also be marked with the the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution,

## 4. SAMPLING

4.1 Representative samples of the material shall be drawn and their conformity to this standard shall be judged as prescribed in Appendix B.

# APPENDIX A

( Clause 2.2 )

## METHODS OF TEST FOR DIPHENYL

### A-1. QUALITY OF REAGENTS

A-1.1 Unless specified otherwise, pure chemicals and distilled water ( *see* IS : 1070-1960\* ) shall be used in tests.

NOTE — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the result of analysis.

### A-2. DETERMINATION OF MOISTURE

A-2.1 Procedure — Weigh accurately about 5 g of the material in a porcelain, silica or glass dish having a depth not exceeding 40 mm previously dried in an oven and weighed. Shake the dish until the contents are evenly distributed. Place the dish in an air-oven maintained at  $105 \pm 2^{\circ}\text{C}$  for 2 hours, cool in the desiccator and weigh. Repeat the process of drying, cooling and weighing at 30-minute intervals until the difference between two successive weighings is less than one milligram. Record the lowest mass.

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\*Specification for water, distilled quality ( *revised* ).

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### **A-2.2 Calculation**

$$\text{Moisture, percent by mass} = \frac{100 (M_1 - M_2)}{M_1 - M}$$

where

$M_1$  = mass in g of the dish with the material before drying,

$M_2$  = mass in g of the dish with the material after drying to constant mass, and

$M$  = mass in g of the empty dish.

### **A-3. DETERMINATION OF MELTING POINT**

**A-3.1 Procedure** — Determine the melting point according to the methods prescribed in IS : 5762-1970\*.

### **A-4. DETERMINATION OF ASH**

**A-4.1 Procedure** — Determine the ash according to the method as described in Method A of IS : 1448 [ P : 4 ]-1968†.

### **A-5. DETERMINATION OF FLASH POINT ( CLOSED )**

**A-5.1 Procedure** — Determine the flash point according to the method as described in IS : 1448 [ P : 21 ]-1970‡.

### **A-6. DETERMINATION OF DISTILLATION RANGE**

**A-6.1 Procedure** — Determine the distillation range according to the method as described in IS : 5298-1969§.

## **A P P E N D I X   B**

( *Clause 4.1* )

### **SAMPLING OF DIPHENYL**

#### **B-1. GENERAL REQUIREMENTS OF SAMPLING**

**B-1.1** Samples shall be taken at a place protected from damp air, dust and soot.

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\*Methods for determination of melting point and melting range.

†Methods of test for petroleum and its product, P : 4 Ash, sulphated ash and water soluble ash (*first revision*).

‡Methods of test for petroleum and its products, P : 21 Flash point ( closed ) by Pensky-Martens apparatus (*first revision*).

§Methods for determination of Distillation range and of distillation yield.

**B-1.2** The sampling instrument shall be clean and dry.

**B-1.3** Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

**B-1.4** The samples shall be placed in clean, dry, air-tight glass, polyethylene or other suitable containers.

**B-1.5** Each sample container shall be sealed air-tight with a stopper after filling and marked with full details of sample, the date of sampling and other identification particulars.

## **B-2. SCALE OF SAMPLING**

**B-2.1 Lot** — All the containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture, the containers belonging to the same batch shall be grouped together and each such group shall constitute a separate lot.

**B-2.1.1** Samples shall be tested for each lot separately for ascertaining the conformity of the material to the requirements of the specification.

**B-2.2** The number of ( $n$ ) of containers to be chosen from the lot shall depend on the size of the lot and shall be in accordance with Table 2.

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**TABLE 2 NUMBER OF CONTAINERS TO BE SELECTED FROM  
LOTS OF DIFFERENT SIZES**

Lot Size	No. of Containers to be Chosen
$N$	$n$
4 to 25	3
26 „ 50	4
51 „ 100	5
101 „ 150	6
151 „ 300	7
301 and above	8

**NOTE** — When the size of the lot is three or less, all the containers shall be sampled.

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**B-2.3** These containers shall be selected at random from the lot and to ensure randomness of selection, random number tables shall be used. In case such tables are not available, the following procedure shall be adopted:

Arrange all the containers in the lot in a systematic manner and starting from any container, count them as 1, 2, 3,....., etc, up to  $r$  and so on,  $r$  being the integral part of  $N/n$  ( $N$  being the lot size and  $n$  the number of containers to be selected). Every  $r$ th container thus counted shall be withdrawn and all such containers shall constitute the sample.

### **B-3. TEST SAMPLES AND REFEREE SAMPLES**

**B-3.1** From different parts of each selected container (see Table 2) draw with an appropriate sampling instrument a small portion of the material. The total quantity of the material drawn from each container shall be sufficient to conduct the tests for all the characteristics given in 2.

**B-3.1.1** Out of these portions, a small but equal quantity of material shall be taken and mixed thoroughly to form a composite sample. This composite sample shall be divided into equal parts, one for the purchaser another for the supplier and third for the use as a referee sample. Each part should be sufficient for the tests required to be made on the composite sample.

**B-3.2** The referee sample shall consist of the composite sample marked for this purpose and shall bear the seals of the purchaser and the supplier. It shall be kept at a place agreed to between the purchaser and the supplier and shall be used in case of a dispute between the two.

### **B-4. NUMBER OF TESTS**

**B-4.1** Tests for all the requirements given in 2 and Table 1 shall be conducted on the composite sample.

### **B-5. CRITERION FOR CONFORMITY**

**B-5.1** A lot shall be declared as conforming to the specification if the composite sample satisfies all the requirements given in 2 and Table 1.

## INDIAN STANDARDS

### ON

#### ORGANIC CHEMICALS ( MISCELLANEOUS ) MATERIALS

##### IS

245-1970	Trichloroethylene, technical ( <i>second revision</i> )
501-1963	Oxalic acid, technical and analytical reagent ( <i>revised</i> )
716-1970	Pentachlorophenol ( <i>first revision</i> )
717-1969	Carbon disulphide, technical ( <i>first revision</i> )
718-1970	Carbon tetrachloride ( <i>first revision</i> )
869-1969	Ethylene dichloride ( <i>first revision</i> )
880-1956	Tartaric acid
3321-1967	Formaldehyde solution
4105-1967	Styrene ( vinyl benzene )
4306-1970	Hexamethylenetetramine ( hexamine ) ( <i>first revision</i> )
4566-1968	Methylene chloride ( dichloromethane ), technical
5149-1969	Maleic anhydride, technical
5158-1969	Phthalic anhydride, technical
5254-1969	Acetanilide
5271-1969	Paraformaldehyde
5295-1969	Ethylene glycol
5296-1969	Chloroform, technical and analytical
5297-1969	Perchloroethylene ( tetrachloroethylene ), technical
5341-1969	Benzyl chloride, technical
5464-1970	Citric acid, monohydrate
5573-1969	Ethylene oxide
5591-1969	Chlorobenzene
5592-1969	Monochloroacetic acid
5992-1969	<i>p</i> -Dichlorobenzene, technical
6393-1971	$\alpha$ -Phenylacetamide
6412-1971	Benzoyl chloride, technical
6515-1972	Sodium pentachlorophenate, technical
6712-1972	<i>o</i> -Dichlorobenzene
6716-1972	Benzoic acid, technical
6718-1972	Phenoxyacetic acid
6775-1973	Ethyl chloride, technical

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